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Sediment Coring in Lake Mead Reservoir, Nevada and Arizona: Implications for Deep Marine Sandstone Distributions

During the summer of 2002 twenty nine cores were collected along two transects in Lake Mead to examine the distribution of sediment within the western part of the reservoir and to ground truth previously conducted geophysical studies. One transect extended from the delta front of the Las Vegas Wash into Boulder Basin. The second transect followed the axis of the original Colorado River in the western third of the lake.

Geophysical profiles reveal several reflectors in Boulder Basin that were presumed to be produced by changes in grain size related to hypothesized turbidity current deposits. The cores from Boulder Basin are composed almost entirely of dark laminated clay, with only a very small percentage of thin silt beds. The silt beds may be distal turbidites associated with large flows.

A recent draw down of Lake Mead water levels has subaerially exposed parts of the Las Vegas Wash delta. We anticipated significant amounts of remobilized sand outboard of the current delta front. Although fine-to very fine-sand layers are present in the cores collected at the mouth of the Las Vegas Wash, the sands are still in close proximity to their source. This sand distribution suggests that flows associated with this ephemeral stream are not sufficient to generate sandy turbidites that extend significant distances beyond the delta front.

In the fall of 2002 additional coring will target the Colorado River delta and regions downstream to determine if sands associated with this larger fluvial system are transported farther into the lake.